On the average the probable error of the unit of weight is $\pm$ $0^m.125$.

The unit of weight in these computations is the weight of a single colour-index determination i. e. the difference between the photogr. magnitude of a star of *the Greenwich catalogue* and the vis. magn. of *Potsdam* (MÜLLER *and* KRON). For the weight of the second member of every equation of condition was taken equal to the number of stars from which the latter was derived.

As to the fact that b is different for different spectral classes, Prof. KAPTEYN found the same result in his paper *On the Absorption of light in space* (*Contributions Mount Wilson* No. 42). The author attributes the phenomenon to an error in the photogr. scale of the Draper Catalogue (see pages 5 and 6 of the above-mentioned paper).

In the same manner I have treated the values of c:

Table 23.

Spectrum	Average c	Weight	p. e. of c
	m		m
B and A	— 0.015	216	± 0.010
F	— 0.022	179	± 0.007
G	— 0.060	142	± 0.013
K and M	— 0.083	75	± 0.008

Here we find on the average the same value for the probable error of the unit of weight i. e. the probable error of a single colour-index determination, viz. $\pm$ $0^m.126$.

6. Summary of results.

1) The later spectral types predominate among the fainter stars (Table 15).

2) The apparent faint stars are, ceteris paribus, bluer thant he bright stars (Table 22).

In my opinion this effect is probably due to an error in the photographic scale of the *Greenwich catalogue* or an error in the visual scale of *Potsdam*.

The surprising result of table 22 is, that the value of b changes with the spectrum.

3) The stars with small proper motion are, ceteris paribus, redder than those with large proper motion (Table 23).

This effect is probably due to an influence of the absolute magnitude on the colour. This influence seems to increase with advancing type, but the effect

seems not to exist for the B and A stars, because for these spectra the value of c ($\pm$ $0^m.015$) is but 1.5 times larger than its probable error ($\pm$ $0^m.010$).

The same phenomenon is found by Dr. P. J. VAN RHIJN in his dissertation *Derivation of the change of colour with distance and apparent magnitude* and by ADAMS and KOHLSCHÜTTER. In the discussion of the results on page 71, of the above-mentioned dissertation we can see that c i. e. the increase of the colour index per unit of distance for the B-stars and early A-stars is equal to 0.00000, whereas c shows a systematic change with the spectral type.

ADAMS and KOHLSCHÜTTER came to the following conclusion on page 1 of their paper *Some spectral criteria for the determination of absolute stellar magnitudes* [1]).

„The continuous spectrum of the small proper motion stars is relatively fainter in the violet as compared with the red than is the spectrum of the large proper motion stars. The magnitude of this effect appears to depend on the spectral type, and increases with advancing type between Fo and Ko."

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[1]) Contributions from the Mount Wilson Solar Observatory No. 89.